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Security)" on the topic of:

**„ORGANIZATIONAL AND MANAGERIAL
CHALLENGES FOR MEDICAL INSTITUTIONS IN
THE CONDITIONS OF PANDEMIC OF COVID-19 (ON
THE EXAMPLE OF MULTIPROFILE HOSPITAL FOR
ACTIVE TREATMENT „HEART AND BRAIN“ EAD -
PLEVEN)“**

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I. GENERAL CHARACTERISTICS OF THE DISSERTATION

1. Relevance of the topic

The COVID-19 pandemic is the best illustration of the ability of a somewhat surprising and seemingly insignificant event, in a remote part of the world, to have a huge impact on social and economic life everywhere, becoming an unprecedented global crisis. The health nature of this crisis has logically become its most tangible feature, putting critical pressure on national health systems. A surprise event like COVID-19 can be characterized along three dimensions: the complexity of its source, the speed of its spread, and the unpredictability of its scale and impact. It is the latter dimension, the scale and impact of the pandemic, that has caused the serious difficulties faced by national health systems. These difficulties have been caused by the realisation of the whole range of risks that can threaten the health system - the safety of life and health of patients and health professionals; the disruption of supply channels for medicines, equipment, supplies and even personal protective equipment; funding difficulties; staffing and the loss of human resources; the lack of motivation and the ethical problems posed, and so on.

It is in an attempt to counteract and minimize the damage of pandemic risks that the management of each health organization has resorted to a proven in practice working tool that has reported high added value for it, which is the risk management in the health organization. Using risk management, healthcare organizations proactively and systematically protect patient and staff safety, as well as the organization's assets, market share, accreditation, reimbursement levels, brand value, and reputation in the community. The COVID-19 pandemic has undeniably confirmed the role and importance of developing and implementing risk management plans, including pandemic plans, within healthcare organizations. Based on the application of all the basic principles of

risk management, health facilities had the chance to prove that they could cope with the COVID-19 pandemic, minimizing the lasting negative consequences for themselves. For those healthcare organizations that had a well-functioning risk management program in place, designed by risk management, this proved to be a routine activity, as their corporate mindset, was already focused on risk management, but for those that did not have one, or underestimated and largely formalized their application, the pandemic became a real crisis.

Due to the dynamic and multifaceted nature of risk management in healthcare, its role is constantly evolving and its importance is growing. It is the dynamism, frequency and severity of the changes that are occurring that require the management of healthcare organizations to monitor the ever-changing landscape of the healthcare risk continuum, making the task of the same, even more complex and responsible.

The issue of risk management in healthcare is the subject of national, European and international debate, legislation and regulation respectively. The latter are aimed at writing clear rules and recommendations on risk management in healthcare and in particular in healthcare organisations. Existing European directives and regulations address issues relating to the provision of healthcare services in a wide range of areas, from their quality to their digitalisation.

No less interest aroused in the scientific community in Bulgaria and worldwide, the issues related to the organizational and management challenges faced by health care institutions in the conditions of pandemic COVID-19 and the resulting need for the implementation of risk management in health care and health organization. The pandemic impact in its different aspects concerning national health systems has been the subject of study and analysis of a large number of scientific studies. Among the Bulgarian authors with works falling within this topical scope, the names of P. Salchev, T. Vekov, P. Dimitrov, Ts. Vodenicharov, Z. Petrova, K. Tsankova, G. Dimitrov. No less attention deserves the fundamental scientific works of M. Popov, E. Delcheva and S. Gladilov

devoted to health policy; the health system; the methods, models and sources of financing in health care; the management of the health care organization; the economic and organizational-managerial aspects of the hospital activity; the issues of human resources management and the remuneration of the personnel in health care, etc. A minority of foreign authors who have made significant contributions with their work on the impact of COVID-19, on health care, health systems and medical institutions are E. Weimann, P. Weimann, A. Capocchi, P. Orlandini, S. Amelio, J. Braithwaite, S. Tabish, R. Busse, D. Moskowitz, C. Barbet-Rambaud, R. Porta, R. Gaggero. It is noteworthy that there is still a certain gap in terms of research looking at the direct and indirect links between the development and implementation of a risk management programme in a hospital and the performance of the same during the COVID-19 pandemic, including in terms of coping mechanisms for emerging risks, patient and staff safety, business continuity, positive financial performance and many others.

2. Object and subject of research

The subject of the dissertation is the private Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, as part of the current national system of hospital medical care in the Republic of Bulgaria.

The subject of the study is the organizational and management challenges faced by the medical institutions in the country in the conditions of pandemic COVID-19 and the need to implement a risk management program (on the example of Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven).

3. Research thesis statement

The thesis of the dissertation is that the pandemic of COVID-19 provokes the management of hospital medical care facilities in our country in the direction

of - rethinking the strategies of the medical institutions and in particular the risk management programs underlying their risk management. The implementation of these programmes is a key management tool and a practice-tested method of counteracting any healthcare organisation (in this case - the Heart and Brain Multiprofile Hospital for Active Treatment - Pleven) that is exposed to unprecedented risk pressure of similar pandemic proportions. Only the proactive and systematic implementation of risk management programmes in the hospital could result positively in ensuring the safety, life and health of patients and staff, as well as the organisation's assets, market share, accreditation, reimbursement levels, brand value and reputation in the community.

4. Purpose of research

The purpose of the study is to demonstrate the need for a strong risk management program. Compliance with the steps of identification, monitoring, assessment and prevention against the existing risks to the operations of the health care institution, and strict implementation of the identified actions, could transform any threat to the health care organization into a positive and generate added value for it.

5. Objectives, methodology and limitations of the research

Achieving the objective of the development, thus defined, implies that within the framework of the same the necessary work will be done:

- derivation of the medical institution-risk management-pandemic relation from COVID-19;
- highlighting the organizational and management challenges faced by medical institutions in Bulgaria in the context of a COVID-19 pandemic;

- conducting a diagnostic analysis of the organization and management of the activity of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven in the period of the pandemic COVID-19.

The object, subject, thesis and goal of the research, outlined above in the text, set a set of **tasks** to be performed, in the following logical sequence:

- Outlining the key characteristics, place and importance of the hospital in modern healthcare systems;

- presentation of the concept of risk management of a medical institution in the context of new projections of public health;

- justification of the application of risk management in the context of a COVID-19 pandemic;

- discussing the state of hospital medical care in the country;

- outlining the main challenges for hospital medical care in Bulgaria during a COVID-19 pandemic;

- analysing the results of the activity of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven in the conditions of pandemic COVID-19;

- a description of the key policy guidelines for COVID-19 risk management at the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven;

- outlining the steps for the implementation of the Risk Management Programme and the capabilities of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven during the COVID-19 pandemic;

- conducting a survey on the impact of COVID-19 on the activities of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven.

The writing of the dissertation is consistent with the scientific developments of a number of our and foreign authors-researchers, dedicated to organizational and managerial challenges facing the medical institutions in the

conditions of pandemic of COVID-19 in our country, with the published official statistical information and regulatory base, current as of 03.05.2023.

The following set of **research methods** has been used in the process of the research: sociological method and more specifically survey method; comparative method; documentary method; analysis and synthesis method; expert evaluation method; observation method; modelling method; statistical methods. The conclusions and recommendations, which served as the basis for the formulated proposals, are based on actual observations on the practice of the health care system in Bulgaria.

6. Scope of the research

The scope of the study **is limited** in several directions:

- the medical institutions in the Pleven region and in particular two of them - the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven and the University Multiprofile Hospital for Active Treatment "Dr. Georgi Stranski" - Pleven, the leaders among the private and public hospitals for inpatient medical care in the region;

- the risk management programmes in place in other hospitals, which use alternative methods of risk identification and assessment respectively, are not taken into account in order to make a comparison between them and possibly indicate which of them is producing better results;

- the respondents to the survey conducted to investigate the impact of COVID-19 on the hospital's operations were only from the Heart and Brain Multiprofile Hospital for Active Treatment - Pleven, i.e. the survey aimed to investigate the attitudes and opinions of the staff, rather than a large-scale survey

of the health care staff of inpatient care facilities in the district or the country, as could have been conducted.

7. Approval of the dissertation work

The dissertation was discussed at meetings of the Department of Insurance and Social Security. Some of the research results have been presented at scientific forums and published in specialized scientific journals.

8. Applicability of the research results

The theoretical arguments developed in the dissertation and the empirical results derived are the basis for enriching the field of science and should be of maximum benefit to practice and in particular to the management of hospital facilities. We approach with the understanding that the subject matter addressed and discussed within the limited scope of the study cannot claim to be exhaustive, but we hope that solutions can be initiated based on the conclusions reached. Here is the place to emphasize thickly one particularly important but not to be underestimated point, namely that surprise events with similar characteristics (complex etiology, rapid spread, unpredictable scale) are likely to continue to occur in the future and remain relatively unpredictable - a reason why healthcare organizations should prepare for the challenges ahead.

II. STRUCTURE AND CONTENT OF THE DISSERTATION

The dissertation consists of a title page; a table of contents - 2 pages; a list of abbreviations used - 2 pages; an introduction - 8 pages; a main text (three chapters) - 193 pages; a conclusion - 4 pages; a list of literature used and cited - 7 pages (78 sources); a list of the author's publications on the topic - 1 page; appendices - 19 pages; and a Declaration of Authenticity and Originality of the Dissertation - 1 page. There are 69 figures and 24 tables. The study has a total of 240 pages and is structured as follows:

LIST OF ABBREVIATIONS USED

INTRODUCTION

CHAPTER ONE. THE FACILITY-RISK-MANAGEMENT-PANDEMIC RELATION FROM COVID-19

1.1 Characteristics, place and importance of the hospital in modern health systems

1.2. The concept of risk management of a medical institution in the context of new projections of public health

1.2.1. Definition and characteristics of risk management as a management concept

1.2.2 Evolution of risk management in healthcare enterprises (ERM)

1.2.3. Risk assessment methods and techniques

1.2.4. Establishment, implementation and monitoring of a risk management plan in a healthcare facility

1.3. Application of Risk Management in a Pandemic Setting from COVID-19

1.3.1. General framework of organisational requirements for the provision of quality health care in a health facility

1.3.2. Practical solutions for risk management in healthcare facilities during the COVID-19 pandemic

Conclusions to chapter one

CHAPTER TWO. ORGANISATIONAL AND MANAGERIAL CHALLENGES FOR THE MEDICAL INSTITUTIONS IN BULGARIA IN THE CONTEXT OF THE COVID-19 PANDEMIC

2.1. State of hospital medical care in the country

2.2. Key challenges for hospital medical care in Bulgaria during a COVID-19 pandemic

2.2.1. National Health Insurance Fund payments to contractual partners based on regulatory decisions

2.3. Results of the activity of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven in the conditions of pandemic COVID-19

Conclusions to chapter two

CHAPTER THREE. DIAGNOSTIC ANALYSIS OF THE ORGANIZATION AND MANAGEMENT OF THE ACTIVITY OF THE MULTIPROFILE HOSPITAL FOR ACTIVE TREATMENT "HEART AND BRAIN" EAD - PLEVEN IN THE PERIOD OF THE PANDEMIC OF COVID-19

3.1. Key guidelines of the COVID-19 risk management policy at the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven

3.1.1. Impact of the COVID-19 pandemic on the activities of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven

3.2. Steps for the implementation of the Risk and Capacity Management Programme of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven during the COVID-19 pandemic

3.2.1. Documentation on risk and capability assessment

3.2.2. Guidelines for future development of the "Risk and Opportunity Management Programme" of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven

3.3. Survey on the impact of COVID-19 on the activities of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven

3.3.1. General information and parameters of the survey

3.3.2. Analysis of survey responses

3.3.3. Summary conclusions of the survey

Conclusions to chapter three

CONCLUSION

LIST OF USED AND CITED LITERATURE

**PUBLICATIONS OF THE AUTHOR ON THE DISSERTATION
TOPIC**

APPENDICES

**DECLARATION OF RELIABILITY AND ORIGINALITY OF THE
DISSERTATION**

III. SUMMARY OF THE CONTENT AND RESULTS OF THE RESEARCH

The introductory part of the dissertation contains a justification of the relevance and importance of the topic. It defines the subject and object of the research and formulates the research thesis. The main aim and the specific research tasks are stated. The scope and methodology of the study are presented.

Chapter One. THE TREATMENT FACILITY-RISK MANAGEMENT-EPIDEMIC RELATION BY COVID-19

Chapter one of the dissertation research is 60 pages in total and consists of three paragraphs. The presentation in it, is the author's attempt to interpret the characteristics, place and importance of the hospital in modern health systems; the concept of risk management of a health facility in the context of new projections of public health and the application of Risk Management in the context of a COVID-19 pandemic.

The first paragraph is entitled "Characteristics, place and importance of the hospital in modern health systems". It runs to 17 pages and was developed in response to the first specific research task set.

The second paragraph of chapter one is entitled "The concept of risk management of a medical institution in the context of new public health projections". It has a total length of 27 pages and is developed in 4 sub-paragraphs, in fulfillment of the second specific research task set.

The first sub-paragraph is entitled "Defining and characterising risk management as a management concept". Within it, the question "What is risk management in healthcare?" is answered; the features of risk management in hospitals, considered as its characteristics, are highlighted and the objectives of risk management in healthcare are stated.

The second sub-paragraph entitled "Evolution of Risk Management in Healthcare Enterprises (ERM)" presents the role of risk management throughout the organization, hospitals in particular the holistic approach adopted called Enterprise Risk Management and the eight risk areas it covers: Operational / Patient Safety / Strategic / Financial / Human / Regulatory / Technological / Hazards. The risk analysis process is discussed. It highlights the fact that users and application systems benefit from integrated risk management because it provides accurate, verifiable and consistent data. A well-managed integrated risk management process adds value to the healthcare facility.

The third sub-paragraph entitled "Risk Assessment Methods and Techniques" analyses risk assessment, viewing it as a careful and detailed examination of all aspects of performance and an important part of the management process. It promotes the idea that risk assessment is carried out with the aim of - identifying the causes that have caused injury, illness or harm, and assessing whether the fixed hazard can be eliminated, and if this cannot happen - what preventative measures should be taken to eliminate, reduce and control the risk(s). It is essential for the successful implementation of risk management that the risk assessment complies with two requirements: that it is a continuous process and that the most appropriate risk assessment method is selected. In operational terms, the most commonly used and yet most reliable risk assessment methods are presented in summary form, with the caveat that each of them has specific characteristics in terms of recruitment, analysis and actual risk assessment.

The fourth sub-paragraph is entitled "Establishing, Implementing and Monitoring a Facility Risk Management Plan" and presents the establishment of a risk management plan as a vital process for the well-being of any healthcare organization. It analyses the factors that influence the RMP.

The third paragraph of Chapter One is titled "Application of Risk Management in a COVID-19 Pandemic Setting" and is developed in two distinct parts totaling 13 pages in fulfillment of the third specific research assignment.

The first sub-paragraph, entitled "A general framework of organizational requirements for the delivery of quality health care in a health facility", discusses the provision of quality and especially safe health services in a pandemic setting and the World Health Organization's plan for core quality systems during COVID-19.

The second sub-paragraph, entitled "Practical Solutions for Risk Management in Healthcare Facilities during the COVID-19 Pandemic", presents the algorithm for the behaviour of healthcare organisations in the event of pandemic risk and the specifics of its individual steps (stages).

In **summary** of the presentation in Chapter 1, the following conclusions can be drawn:

✓ *Following accepted health policy and delivering the priorities of the National Health Strategy, the role of hospitals is to complement and enhance the effectiveness of many other parts of the health system, ensuring the continued availability of services for acute and complex conditions. They are designed to concentrate scarce resources within well-planned referral networks to respond most effectively to the health needs of each country's population. In this line of thought, hospitals appear as a key element of universal health coverage and are critical to achieving the SDGs.*

✓ *A hospital is a system with different components that are integrated with a common goal to achieve a set of objectives. The quality delivery of all hospital services is highly dependent on successful collaboration and established coordination between the different components in the hospital system. While the individual subsystems of hospitals have specific goals to provide the best care for patients, in their totality they are subordinate to the vision of modern hospitals as*

highly complex, social, economic and scientific organizations whose primary function is to provide comprehensive health services.

✓ *Risk management in healthcare includes clinical and administrative systems, processes and reports used to detect, monitor, assess, mitigate and prevent risks. Using risk management, healthcare organizations proactively and systematically protect patient safety as well as the organization's assets, market share, accreditation, reimbursement levels, brand value, and reputation in the community.*

✓ *Risk management encompasses the processes of identifying risks, selecting prevention strategies (to prevent and avoid risks) and protection/safeguarding (proactive measures to mitigate existing hazards), and developing a contingency plan, especially in cases where risks are not preventable, i.e. cannot be avoided by known conventional means.*

✓ *Neither theorists nor practitioners of risk management in the health care setting doubt that it is possible to have a hospital in which errors do not occur as a result of realized risks. After all, in these organizations, people work, not machines. It is for this reason that healthcare facility management implements risk management into the operations of the entire organization with the clear vision of creating risk awareness among all employees. The expected outcome of this action is the initiation of the creation and development of lasting skills and especially a culture of error prevention.*

✓ *At the beginning of the pandemic, the lack of sufficient information and the long process of learning about the infection, its uncontrolled spread and the extreme deterioration of the situation, did not allow the implementation of proactive actions by the senior management of the national health systems. Instead, the response to the same, was rather and to some extent haphazard and chaotic, and last but not least - primarily counteractive, i.e. with the character of a primary response (or rather reflection), but in the absence of the specific in such situations - appropriate systemic responses. This fact, logically, became the*

reason why the announcement of the pandemic of COVID-19, on the one hand, provoked the revelation of the existing weaknesses and defects in a number of areas of the health system, and on the other - activated the management of hospital facilities in the direction of - testing their own, current plans for risk management.

Chapter Two. ORGANIZATIONAL AND MANAGERIAL CHALLENGES FOR THE MEDICAL INSTITUTIONS IN BULGARIA IN THE CONDITIONS OF PANDEMIC OF COVID-19

Chapter two of the dissertation is 60 pages in total and consists of three paragraphs. It reflects the results of the analysis of the current state of hospital nursing in the country and the challenges it faces in the context of the COVID-19 pandemic. It also presents and analyses the results of the activities of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven in the context of the COVID-19 pandemic.

The first paragraph is titled "The state of hospital medical care in Bulgaria" and is developed in a volume of 24 pages, in fulfillment of the fourth set specific research task. The statement in it is part of the author's elaboration, presented in connection with the validation of the results of the research work, at the Fifteenth Doctoral Research Session, subsequently published in the Annual Almanac of Doctoral Research (Issue XII - 2019, Book 15, pp. 325-340, URL: <https://almanahnid.uni-svishtov.bg/title.asp?title=1525>) as an article entitled "A Critical Analysis of the Problems in the Hospital Sector". It critically examines the issues related to the legislative framework, the specifics and peculiarities of the hospital medical care facilities in Bulgaria and the strengths and weaknesses of the medical care facilities - public and private ownership.

The second paragraph is titled "Key Challenges for Hospital Medical Care in Bulgaria during the COVID-19 Pandemic" and is 20 pages in length and fulfils the fifth specific research objective.

The first sub-paragraph (and the only one) is entitled "Payments of the NHIF to contractual partners based on regulatory decisions". It presents a comparative analysis of data publicly disclosed by the NHIF - concerning delegated budgets for medical care hospitals in the country; reported and paid medical activities; the relative share of the value of activities performed according to the type of hospital ownership, the treatment of COVID-19, including medical activities reported to the NHIF for intensive care and resuscitation.

The third paragraph is titled "Results of the activity of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven in the conditions of pandemic COVID-19" is 13 pages in length in fulfillment of the sixth specific research task. It presents an analysis of the main performance indicators (including financial ones) of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, comparing them with those of the other medical institutions functioning on the territory of the Pleven region. A comparison is made between the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven and the University Multiprofile Hospital for Active Treatment "Georgi Stranski" EAD on the basis of their balance sheet indicators and the indicators from the profit and loss account.

To summarise the discussion in Chapter Two, the following **conclusions** can be drawn:

✓ *The health insurance system in Bulgaria should be further developed on the basis of the principles enshrined in the best examples of European and world practice in this field, which should be summarized in the overall concept for the development of health care. Hospital management has been an area of continuous change over the last 20 years. Changes are occurring in the way of*

financing, new requirements for hospital management are emerging, modern technologies are entering into the reporting and implementation of medical and administrative activities, the focus is shifting to increasingly active project work. There are also increasing challenges in finding and retaining the right staff, maintaining goodwill with patients, and meeting the growing needs and demands of society.

✓ *The single leader among medical institutions in Pleven Region, and in particular among public ones, is the University Multiprofile Hospital for Active Treatment "Dr. Georgi Stranski" EAD, which in the period under review received the most funds under health insurance payments for hospital medical care (under the National Framework Contract) - BGN 39 369 191 (for 2019), BGN 41 193 618 (for 2020) and BGN 36 649 528 (for 2021). The hospital recorded the best result in 2020, after which in 2021 it recorded the lowest value of funds received during the period under review.*

✓ *The categorical leader among the private medical institutions in Pleven region is the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven. During the whole period under consideration 2019-2021 it receives the most funds under health insurance payments for hospital medical care (under the National Framework Contract) - BGN 18 447 572 (for 2019), BGN 20 555 066 (for 2020) and BGN 31 260 517 (for 2021). It is noteworthy that in each of the analysed years an increase in the funds paid under the National Framework Contract is recorded, which gives us grounds to speak of a positive trend in terms of the volume of hospital care provided and, accordingly, the funds received under this line. The steady upward trend in these funds is in itself a good testimonial for the hospital's management team and for its ambitions to become a leading medical institution in the region.*

✓ *The main competitor of the private Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven on the territory of the Pleven region is the public University Multiprofile Hospital for Active Treatment "Dr. Georgi*

Stranski" EAD, which is a reason to believe that in the near future there will be another rearrangement of positions on the market for health services on the territory of the Pleven region, and that the investments made by the private hospital already have a return and give a positive result.

✓ *The company with the best coverage of assets with net income is Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, which reports a value of the indicator of 4.69 at the beginning of the study period (2018-2021). With regard to other indicators, a comparison is made between those of a relatively constant nature (depreciation) and those of a variable nature (the cost of raw materials, materials and external services). As well as personnel costs. Their comparison with the assets confirms the initial conclusion of a distinct negative effect of the pandemic on the activity of both companies under study - Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven and the Multiprofile Hospital for Active Treatment "Dr. Georgi Stranski" - Pleven.*

Chapter Three. DIAGNOSTIC ANALYSIS OF THE ORGANIZATION AND MANAGEMENT OF THE ACTIVITY OF THE MULTIPROFILE HOSPITAL FOR ACTIVE TREATMENT "HEART AND BRAIN" EAD - PLEVEN IN THE PERIOD OF THE PANDEMIC OF COVID-19

The third chapter of the dissertation has a total volume of 72 pages and, in terms of composition, consists of three paragraphs. The presentation in it expresses a diagnostic analysis of the organization and management of the activities of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven during the period of investigation of the COVID-19 pandemic and the conclusions reached from the implemented own "Risk Management Program and the possibilities'.

The first paragraph is entitled "Key guidelines of the policy for the management of the risk of COVID-19 in the multi-specialty hospital for active treatment "Heart and Brain" EAD - Pleven" and includes a single subsection in a volume of 8 pages, in fulfillment of the seventh set specific research task.

The first subparagraph (and the only one) is "Reflection of the COVID-19 pandemic on the activities of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven" and is part of the author's development, presented in the form of a report with the title: "Challenges to the management of the medical facilities in conditions of a pandemic of COVID-19 (following the example of the University Multispecialty Hospital for Active Treatment "Heart and Brain" - Pleven)", in connection with approving the results of the research work during the held International Scientific and Practical conference "Sustainable Development and Socio-Economic Cohesion in the 21st Century - Trends and Challenges" (November 8-9, 2021) (Collection of Papers, Volume I, ISBN 978-954-23-2067-8 (print), ISBN 978-954 -23-2068-5 (online), Tsenov Academic Publishing House, Svishtov, 2021, pp. 446-452). It presents the five key steps taken by the management of the medical facility in relation to the complicated situation as a result of the announced pandemic of COVID-19.

The second paragraph is entitled "Steps for the implementation of the Program for controlling the risks and opportunities of the General Hospital for Active Treatment "Heart and Brain" EAD - Pleven during the COVID-19 pandemic" and is 12 pages long (including two sub-paragraphs). It was fully developed in fulfillment of the eighth set specific research task.

The first sub-paragraph is entitled "Documentation on assessment of risk and opportunities" and presents in detail the two key documents from the nomenclature of the documentation concerning risk management in Multispeciality Hospital for Active Treatment "Heart and Brain" EAD - Pleven", namely:

- DC 06_01_01 Risk assessment;
- DC 06_01_02 Program for controlling risks and opportunities.

The second subparagraph is formulated as follows: "Guidelines for the future development of the "Program for managing risks and opportunities" of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven" and includes priority guidelines for the future development of the program, which aims to ensure the continuity of the activity and prevent the insolvency and bankruptcy of the organization, ensuring the expectations of the shareholders-owners of the company and of all other interested parties in society.

The third paragraph is entitled "Survey study regarding the impact of COVID-19 on the activity of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven" and is composed of three sub-paragraphs, totaling 46 pages, in fulfillment of the ninth set specific research task.

The first sub-paragraph is entitled "General information and parameters of the conducted survey". In the content part of the same, a "Survey on the impact of COVID-19 on the activities of the General Hospital for Active Treatment "Heart and Brain" EAD - Pleven" is presented to establish the awareness of the staff of the General Hospital for Active Treatment "Heart and Brain" EAD - Pleven, regarding: the availability, good information, knowledge of the action algorithm and the existence of feedback on the "Program for mastering the risks and opportunities" adopted and implemented by the hospital's management in general and in particular on the occasion of the pandemic of COVID-19. The object, subject, purpose and main thesis of the survey are defined and its structure, including six sections, is thoroughly presented.

The second sub-paragraph is entitled "Analysis of the answers to the survey" and through the analysis of the answers of the respondents, it empirically proves the thesis that the risk management of hospital treatment facilities is key

to guarantee the continuity and high quality of health services, as well as the safety of patients and the staff.

The third subparagraph is entitled "Summary conclusions from the conducted survey" and it presents the following general summaries:

- A significant to strong correlation was found between personal involvement in the diagnostic-treatment process of a COVID-19 patient and a high rating of the adequacy of the hospital management team's responses at the onset of a declared COVID-19 pandemic, in terms of patient and staff safety: the value of χ^2 for the relationship studied was 239,284 and was statistically significant, and the Cramer's ($V = 0,5733$), Chuprow's ($K = 0,5733$), and Pearson's ($C = 0,7537$) coefficients.

- Significant to strong correlation was demonstrated between personal participation in the diagnostic and treatment process of a patient with COVID-19 and the degree of awareness of the objectives of the risk management program of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven - the value of χ^2 for the studied relationship is 218,295 and is statistically significant, and the coefficients of Kramer is ($V = 0,5476$), of Chuprov ($K = 0,5476$) and of Pearson ($C = 0,7385$). The "Programme for managing risks and opportunities" in place during the COVID-19 pandemic, combined with the efforts made to keep the staff well informed about their safety and that of the patients, have practically become a serious advantage for the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, bringing it a valuable advantage over its competitors.

- The correlation between the participation in the diagnostic and treatment process of a patient with COVID-19 and the degree of satisfaction with the training provided to familiarize with the specifics of the risk management plan in the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, according to Kramer's coefficients ($V = 0,4447$) and Chuprov's (

$K = 0,4447$) is moderate, according to Pearson's coefficient ($C = 0,6646$) is significant, and the magnitude of ($\chi^2 = 173,968$) is statistically significant. This also testifies to the high evaluation that the staff of the institution gives to the management team and especially to the efforts made and the excellent organisation in explaining the risks, mechanisms and events of the 'Risk and Opportunity Management Programme'.

- The correlation between the degree of participation in the diagnostic and treatment process of a COVID-19 patient and the degree of satisfaction with the attention given and subsequent implementation of staff suggestions to improve patient safety was significant according to Kramer's ($V = 0,5844$) and Chuprow's ($K = 0,5844$) coefficients and strong according to Pearson's ($C = 0,7599$), coefficient, and the magnitude of ($\chi^2 = 248,631$) was statistically significant. This implies that the hospital has a working system for feedback and thorough investigation of suggestions made by staff for changes to improve patient and staff safety, demonstrating a high degree of 'listenability' by both line managers and top level managers.

- The more direct the degree of personal involvement in the diagnostic-treatment process of a COVID-19 patient, the higher is the assessment of the plan for the management of the risk of infection with COVID-19 and the actions taken in this regard by the management team of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven - Kramer's ($V = 0,5447$) and Chuprov's ($K = 0,5447$) coefficients show the presence of a significant correlation, and according to Pearson's ($C = 0,7367$) coefficient the dependence is strong. The test of the hypothesis of the existence of the studied dependence revealed that it is statistically significant ($\chi^2 = 213,63$).

- A statistically significant correlation ($\chi^2 = 211,3978$) was demonstrated between the degree of personal involvement in the diagnostic-treatment process of a COVID-19 patient and the identification of the most serious

challenges and difficulties in the work process during the COVID-19 pandemic, which according to Kramer's ($V = 0,4912$) and Chuprow's ($K = 0,4912$) coefficients, the correlation was moderate, and according to Pearson's ($C = 0,6962$) coefficient, the correlation was significant. The existence of this dependence also determines the prevalence of responses identifying the most serious challenges and difficulties faced by respondents during the work process, namely the prominence of health issues, followed by ethical issues and, to a much lesser extent, organisational, financial and other issues. All this proves that in terms of organizing the processes in the hospital at every level, during the pandemic of COVID-19, it was at a very high level and the management team strictly followed what was written in the current "Risk and Opportunity Management Programme".

- The correlation between participation in the diagnostic-treatment process of a COVID-19 patient and the assigned patient safety score in the respective hospital unit was statistically significant ($\chi^2 = 75,1611$) and defined as moderate according to Kramer's ($V = 0,4544$) and Chuprow's ($K = 0,3821$) coefficients and significant according to Pearson's ($C = 0,5406$)¹ coefficient. This once again confirms the conclusion that the hospital management has created and maintains the necessary conditions for the safety of staff and patients in the hospital, respectively the best possible conditions for the safety of those involved in the diagnostic and treatment process have been created and are available.

In summary of the presentation in Chapter Three, the following **conclusions** can be drawn:

✓ *Multidisciplinary hospital for active treatment "Heart and Brain" EAD - Pleven, started its activity on February 27, 2017, after investing BGN 35 million for its construction and equipment as a high-tech medical facility on the*

¹ Kramer's and Chuprow's coefficients have different values for different numbers of factor and outcome determinations, and in this case the estimated correlation coefficients never reach 1.

territory of the city of Pleven, also called (and not without reason) - the health hub of Northern Bulgaria. The hospital is part of the Bulgarian Cardiology Institute from the "Trade League - National Pharmacy Center" company group, which is the main distributor of the pharmaceutical manufacturer in the "Chaikafarma high-quality drugs" holding. General hospital for active treatment "Heart and Brain" EAD - Pleven is modernly equipped and specializes in innovative health technologies for the treatment of a number of diseases.

✓ *Already with the announcement of the COVID-19 pandemic in our country, the management team of Multispeciality Hospital for Active Treatment "Heart and Brain" EAD - Pleven, proceeded to update its Program for controlling risks and opportunities, and for this purpose turned to specialized company - consulting organization "BSZ Universe". The object of the Risk and Opportunities Management Program is to determine the order and methods for qualitative risk analysis, risk identification and assessment, as well as the order for implementation of planning activities to reduce the impact of risk factors to an acceptable level. Of key importance for the effective and efficient implementation of the Risk and Opportunity Management Program is the selection stage of determining a qualitative risk analysis method. The importance of this choice is dictated by the need for the chosen qualitative risk analysis method to have a set of the following characteristics:*

- to be the most appropriate for the specific situation and organization - in the specific case Multispeciality Hospital for Active Treatment "Heart and Brain" EAD - Pleven;*

- the results of the conducted assessment help to expand the understanding of the risk/s in Multispeciality Hospital for Active Treatment "Heart and Brain" EAD - Pleven and to provide guidelines for impacting it/them;*

- the chosen method should be traceable, repeatable and verifiable.*

For the purposes of this dissertation and more specifically to establish the awareness of the staff of the Multispecialty Hospital for Active Treatment "Heart

and Brain" EAD - Pleven, regarding: the availability, good awareness, knowledge of the action algorithm and the existence of feedback on the "Program for mastering the risks and opportunities" adopted and implemented by the hospital's management, in general and in particular on the occasion of the COVID-19 pandemic, a "Survey on the impact of COVID-19 on the activities of the Multispecialty Hospital for actively treated patients" was conducted Heart and Brain" EAD - Pleven".

Subject of the survey - the staff of the Multispecialty Hospital for actively treated patients "Heart and Brain" EAD - Pleven.

Subject of the survey - the staff's awareness of the current "Risks and Opportunities Management Program" and giving a subjective assessment of the adequacy and consistency of the set of management decisions and actions taken by the hospital management to minimize the impact and consequences of the outbreak of the pandemic from COVID-19.

The purpose of the survey - to obtain reliable and objective data regarding:

- 1) the relations between the individual members of the staff at the workplace, from the point of view of the team (collective work);*
- 2) the demonstrated level of professional responsibility of the mentor in relation to patient safety and the microclimate created by the management in this regard, coordination and cooperation between hospital units;*
- 3) the frequency of reported adverse events or staff errors and the reliability of internal rules;*
- 4) detailed knowledge of the "Program for mastering risks and opportunities", the algorithm of personnel action in the event of a risk of a different nature, as well as actions to ensure health and safety at individual workplaces;*
- 5) the promptness and adequacy of the hospital management in undertaking and introducing measures in connection with the COVID-19 pandemic and the conducted trainings for the application of standard procedures in the detection of symptoms of infection with COVID-19, the sufficiency and access to personal protective equipment, the fixed difficulties related to the disease;*
- 6) the accumulated work experience in the multi-specialty*

hospital for actively treated "Heart and Brain" EAD - Pleven, in the hospital unit and in the health system as a whole, the length of the working week, the specific position held and in this connection - the presence or absence of direct contact with patients.

The main thesis of the survey - confirmation of the idea that the key to guaranteeing the continuity and high quality of health services, as well as the safety of patients and medical professionals, is the proactive way to define and manage risks in hospital medical facilities, namely - risk the management. The latter is both a function and a tool for improving the results of the hospital's activity, but only if two key conditions are observed: 1) this should not be done fictitiously, but should become a philosophy of the organization; and 2) all hospital staff, from the ambulance driver to the executive director, are active participants in this process, which guarantees the success of the risk management plan. In the specific case, testing the idea that the efforts made by the management team of the Multispecialty Hospital for actively treated "Heart and Brain" EAD - Pleven, give a real result, which helps them to become a market leader not only in the regional, but also in national scale.

✓ *The presented results of the analysis of the distribution of the respondents' answers give reason to claim that the "Program for mastering the risks and opportunities" adopted at the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven is not just a document, but it is a real working program. It should be added, and not without reason, that the staff is well acquainted with it and its algorithm of action, and management decisions related to it are made on the basis of those laid down in it: criteria, standards, scenarios and measures for action.*

✓ *Real positive effects of its implementation have been identified, which are expressed not only in the final medical and financial results of the hospital, but also in the creation of a favorable and safe environment for the staff and patients, high professionalism at all levels of management and the provision of*

medical services in the health facility. The questionnaire survey confirmed the hypotheses regarding the adequacy, comprehensiveness and comprehensiveness of the Program, as according to the answers of the respondents, they find a direct expression in the many management decisions and measures taken by the hospital management during the COVID-19 pandemic.

In confirmation of what has been stated so far are the results of the analysis of the two-dimensional empirical distributions formed based on the answers to pairs of questions, thus forming cross-groups that allow testing the presence of dependence and measuring its strength. The presence of dependence was tested using the chi-square method for the analysis of bivariate distributions, and the strength of the dependence was determined using the correlation coefficients of Cramer, Chuprov, and Pearson. The performed hypothesis tests prove the existence of statistically significant relationships between the studied characteristics. On the basis of the analysis carried out, it was found that key regarding the reliability of the assessment of the current "Program for controlling risks and opportunities" during the COVID-19 pandemic on the activities of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven" is the personal participation in the diagnostic and treatment process of a patient with COVID-19 (established through question 9 of section D of the questionnaire).

Conclusions

The COVID-19 pandemic has put unprecedented pressure on the national health systems of countries around the world, including Bulgaria. The organizational-management challenges generated in this regard for the native medical facilities for hospital medical care, proved that the valuable risk management strategies developed and implemented by them are of primary importance for their viability. By establishing a consistent and systematic approach to minimizing the risks inherent in healthcare, more and more healthcare

organizations can successfully protect the quality of healthcare services, the safety of their patients and staff, and financial sustainability while navigate the dynamic environment of ongoing changes. With the subject area outlined in this way, within the framework of the present scientific study, in our humble opinion, the set goals and objectives have been fulfilled, namely:

- key features are highlighted, location is emphasized and the importance of the hospital in modern healthcare systems is emphasized;
- the concept of risk management of a medical facility in the context of the new projections of public health is presented in a theoretical plan;
- the need for the application of "Risk Management" in the conditions of a COVID-19 pandemic is justified, in the context of the possibility to account for the added value of the implementation of the risk management program in each healthcare organization, which guarantees it an appropriate response in the event of sudden risk, be it of pandemic proportions;
- the state of hospital medical care in our country in the period 2018-2022 was discussed, which time range allows the comparison of the statistically available data from the pre-crisis and crisis years;
- outlining the main challenges facing hospital medical care in Bulgaria during the COVID-19 pandemic in purely medical, organizational-management and financial terms;
- the results of the activity of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven in the conditions of the COVID-19 pandemic were analyzed, which gave it a leadership position among private medical facilities in the Pleven region;
- the key guidelines of the policy for managing the risk of COVID-19 in the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven are described and the steps taken in the direction: closing 4 buildings of the hospital and transforming 110 beds for the treatment of patients in uncomplicated and extremely severe condition; construction and equipment of the

most modern and successful COVID-19 intensive care unit in Bulgaria, and also the largest in Northern Bulgaria; the opening of a specialized immunization office, which coincided with the launch of an immunization campaign against COVID-19; establishment of correct relations and creation of an atmosphere of complete trust with the NHOC/RhOC - Pleven regarding the reporting of the activities carried out by the medical facility during the pandemic; paying due attention to the post-COVID syndrome or the so-called "long tail" of COVID-19 - are multiple persistent conditions and disabilities in patients who have recovered from the coronavirus infection (damages in the small vessels of the brain, heart and the whole body) that are the narrow specialty of Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven;

– the steps for implementing the Program for controlling the risks and opportunities of the Multidisciplinary Hospital for Active Treatment "Heart and Brain" EAD - Pleven during the COVID-19 pandemic are indicated, including: analyzing and identifying the possible points of risk for quality of the services offered; defining the risk assessment elements; risk calculation; risk assessment and management; a description of the measures to be taken; reviewing the risk assessment; actions to manage risks and opportunities;

– a survey was conducted regarding the impact of COVID-19 on the activities of the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven. The analysis of the distribution of the responses of the respondents to the survey gives reason to claim that the "Program for mastering the risks and opportunities" adopted at the Multispecialty Hospital for Active Treatment "Heart and Brain" EAD - Pleven is not just a document, but a really functioning program. with which the staff is well acquainted, and which helps the hospital management to make the right management decisions.

The requested research results confirm the defined thesis of the dissertation research, namely that the COVID-19 pandemic provokes the management of medical institutions for hospital medical care in our country, in the direction of

rethinking the strategies of medical institutions and, more specifically, the management programs of the risk underlying their risk management.

The COVID-19 pandemic and its uncontrolled spread, and hence the extreme deterioration of the health situation, did not allow the implementation of proactive actions by the senior management of the national health systems, whose response was more reflexive than proactive. appropriate for such specific situations - a systemic response. This fact, logically, became the reason that the COVID-19 pandemic, on the one hand, provoked the disclosure of the existing weaknesses and defects in a number of areas of the Bulgarian health system, and on the other hand, activated the management of hospital facilities to apply risk management and -specifically the risk management program. The implementation of this program is a guarantee that any healthcare organization (in the specific case Multispeciality Hospital for Active Treatment "Heart and Brain" EAD - Pleven), exposed to unprecedented pressure from a risk with similar pandemic scales, will proactively and systematically protect the safety, life and patient and staff health, as well as the organization's assets, market share, accreditation, reimbursement levels, brand value and reputation in the community.

IV. GUIDELINES FOR FUTURE RESEARCH ON THE DISSERTATION TOPIC

Regardless of the desire to cover the entire range of issues related to the researched topic, a number of aspects remain only marked or partially affected, without exhausting their completeness and comprehensiveness. The latter suggests that they become a potential for future scientific research of the author in the following directions:

First. Conducting a survey with respondents - the management teams of medical facilities for hospital medical care, at the national level, with the aim of establishing the impact of the COVID-19 pandemic and the reflection manifested as a result of the implementation of the PUR in their medical facilities.

Second. Scientific study of the existing relationship between the principles of risk management, the risk exposure of medical institutions in our country and the prospects for their strategic development in the future.

Third. Development and improvement of the methodology for risk assessment and management in healthcare organizations, given the continuous emergence of new and unknown risks.

Fourth. Appraisal of the results of the proposals made in the current development for updating the Risk Management Plan and establishing the achieved degree of effectiveness, regarding sustainability and long-term success, as a result of their implementation.

V. REFERENCE FOR THE SCIENTIFIC AND APPLIED CONTRIBUTIONS IN THE THESIS

First. The generalizations and systematizations regarding the meaningful characteristics of the modern management of the medical institution and more specifically of the risk management, and hence the detailed presentation of the algorithm and the specifics of the preparation of a risk management plan in the healthcare organization/enterprise.

Second. The study of the organizational and management challenges faced by health care institutions in the context of a COVID-19 pandemic and the dependencies identified in this regard.

Third. Evaluation of the development and status of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, in the context of the COVID-19 pandemic and as a direct result of the adopted organizational behavior and hospital risk management policy by its management team.

Fourth. In order to ascertain the effective implementation of the Risk and Opportunity Management Program, a survey instrument targeting the staff of the largest private medical institution in the territory of the Pleven region was piloted with the elicitation of representative data from respondents using verbal-graphic models.

Fifth. On the basis of the analysis of the results of the implementation of the "Risk and Opportunity Management Program" of the Multiprofile Hospital for Active Treatment "Heart and Brain" EAD - Pleven, specific guidelines for the future updating of the same in order to ensure continuity of operations, prevent insolvency and bankruptcy of the organization, secure the expectations of the shareholders-owners of the company, and all other stakeholders in society.

VI. LIST OF THE PHD STUDENT'S PUBLICATIONS

I. Articles:

1. Miteva, L. (2019). Critical analysis of the problems in the hospital sector. Annual almanac of doctoral students' research. Annual Almanac of Doctoral Students' Research (Issue XII - 2019, Book 15), pp. 325-340, URL: <https://almanahnid.uni-svishtov.bg/title.asp?title=1525>

II. Papers:

1. Miteva, L. (2021). Challenges for the management of medical institutions in conditions of pandemic of COVID-19 (on the example of University Multiprofile Hospital for Active Treatment "Heart and Brain" - Pleven). Proceedings of the International Scientific and Practical Conference "Sustainable Development and Socioeconomic Cohesion in the XXI Century - Trends and Challenges" (8-9 November 2021), Volume I, ISBN 978-954-23-2067-8 (print), ISBN 978-954-23-2068-5 (online), Academic Publishing House "Tsenov", Svishtov, 2021, pp. 446-452

2. Miteva, L. (2022). Digital transformation in medical care provided by the Bulgarian Cardiology Institute. Proceedings of the International Scientific and Practical Conference "Circular Economy in the Context of the Industry 4.0 - Society 5.0 Relation" (21-22 October 2022), ISBN (print) 978-954-23-2249-8, ISBN (online) 978-954-23-2250-4, Academic Publishing House "Tsenov", Svishtov, 2022, pp. 237-245, URL: <http://hdl.handle.net/10610/4687>

VII. Reference for Compliance with the National Requirements under the Regulations for Implementation of the Academic Staff Development Act in the Republic of Bulgaria

National requirement in number of points: **30.00**

Number of **articles** published in non-refereed peer-reviewed journals or published in edited collective volumes: 1

Number of points for the author: 10 points

Number of **reports** published in non-refereed peer-reviewed journals or published in edited collective volumes: 2

Number of points for the author: 20

Total Points: 30,00 = 30,00

VIII. DECLARATION OF ORIGINALITY OF THE THESIS

In connection with the procedure for obtaining the degree of Doctor of Education and Science in the scientific specialty of Finance, Money Circulation, Credit and Insurance (Insurance and Social Security), I declare:

1. 1. The results and contributions in the dissertation work entitled: "Organizational and managerial challenges for medical institutions in the conditions of pandemic of COVID-19 (on the example of Multiprofile Hospital h "Heart and Brain" EAD - Pleven)" are original and are not borrowed from research and publications in which the author has no participation.

2. The information presented by the author in the form of copies of documents and publications, personally compiled reports, etc. corresponds to the objective truth.

3. The results obtained, described and/or published by other authors are duly and extensively cited in the bibliography.

Date 29.05.2023

Svishtov

Declarant:.....

/PhD student Lyuba Miteva/